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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/041,698    03/13/98    HUFFER    S    47852

IM62/0213

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EXAMINER

LU, C

ART UNIT

PAPER NUMBER

1713

DATE MAILED:

12  
02/13/01

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UNITED STATES DEPARTMENT OF COMMERCE  
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 12

Application Number: 09/041,698  
Filing Date: March 13, 1998  
Appellant(s): Hueffer et al.

Ronald H. Smith  
For Appellants

**EXAMINER'S ANSWER**

MAILED  
FEB 13 2001  
GROUP 1700

This is in response to appellant's brief on appeal filed January 3, 2001.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) Status of Claims**

The statement of the status of the claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Invention**

The summary of invention contained in the brief is correct.

**(6) Issues**

The changes are as follows:

(a) Are claims 3-11 obvious within the meaning of 35 USC 103(a) over Shinosaki et al. (JP 07-025946, translated copy) [or] and Noristi et al. (US 5,244,854) independently?

(b) Are Claims 12 and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shinosaki et al. (JP 07-025946, translated copy), Noristi et al. (US 5,244,854), Ebara et al. (EP 0 657 477 A2), [or] and Yanagihara et al. (EP 0 712 869 A1) independently.

**(7) Grouping of Claims**

The rejections of claims 3-12 and 14 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

✓ US 5,244,854 ✓	Noristi et al.	09/1993
✓ JP 07-025946 ✓	Shinosaki et al.	01/1995
✓ EP 0 657 477 A2 ✓	Ebara et al.	06/1995
✓ EP 0 712 869 A1 ✓	Yanagihara et al.	05/1996

**(10) Grounds of Rejection**

1. Claims 12 and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shinosaki et al. (JP 07-025946, translated copy), Noristi et al. (US 5,244,854), Ebara et al. (EP 0 657 477 A2), and Yanagihara et al. (EP 0 712 869 A1) independently.

The instant claims are directed to a propylene homopolymer and a film, fiber or molding thereof, wherein the propylene homopolymer is prepared by a Ziegler-Natta catalyst system which produces polypropylene with high isotacticities.

Shinosaki et al. teach a propylene homopolymer with extremely high isotacticity pentad value and a film, filaments or molding thereof, wherein the polypropylene is prepared by a Ziegler-Natta catalyst system which is substantially similar to that of the instant claims (page 6, the last paragraph; pages 45-46; and Examples 1-5).

Noristi et al. teach a propylene homopolymer with high isotacticity, wherein the polypropylene is prepared by a Ziegler-Natta catalyst system which is substantially similar to that of the instant claim 12 (Table 1B). Noristi et al. is for rejection over claim 12 only.

Ebara et al. (page 4, lines 10-18, page 12, lines 11-21, and Table 1) and Yanagihara et al. (page 3, lines 14-19, page 12, lines 17, and Table 2-1) teach homopolypropylene with high isotacticity and films or sheets thereof, wherein the polypropylene is prepared by a Ziegler-Natta catalyst system which is substantially similar to that of the instant claims.

Like the homopolymer of the polypropylene of the instant claim, the polymers disclosed in the cited prior art have very high isotacticities and are made by processes using catalyst compositions which are the same or substantially similar to those of the instant claims. Under these circumstances, there is a reasonable basis to presume that the prior art polymers would be inherent the same or substantially similar to the claimed polypropylene.

Once a product appearing to be substantially identical is found and a 35 USC 102/103 rejection made, the burden of proof is shifts to the applicant to show an unobvious difference. In re Fitzgerald, 205 USPQ 594. In re Fessmann, 180 USPQ 324.

"Even though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product do not depend on its method of production. If the product-by- process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 227 USPQ 964.

Applicants have not met their burden to demonstrate an unobvious difference between the claimed product and the products of the prior art examples.

2. Claims 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinosaki et al. (JP 07-025946, translated copy), and Noristi et al. (US 5,244,854) independently.

The instant claims are directed to a process for preparation of polypropylene homopolymer in the presence of a catalyst system comprising a) a titanium-containing solid component, b) an aluminum compound cocatalyst, and c) a further electron donor, wherein the titanium-containing solid component is obtained by i) reacting a titanium halide with a chlorine-free magnesium compound, an inorganic oxide carrier, an alkanol and ii) reacting the product of step i) with titanium halide and an electron donor.

Shinosaki et al. teach a process for the preparation of polypropylene homopolymer in the presence of a catalyst system comprising (a) a solid titanium catalyst component, (b) an aluminum compound, and (c) silicon compound --the electron donor (page 17, [0049], page 26, [0086]-[0090]); wherein the solid titanium catalyst component is prepared "a process that brings a contact-reaction product of an inorganic carrier and an organomagnesium compound into contact with a titanium compound and preferably with an electron donor" (page 22, (3)). The magnesium compound (chlorine-free), titanium compound and electron donor are particularly taught in page 18, [0055], page 19, [0057], pages 20-21, [0064], which encompass those of the instant claims.

The Working Example 1 of Shinosaki et al. teaches the preparation of the solid titanium catalyst component (a) which satisfies all the limitation of the instant claims except that an inorganic

oxide carrier is not used and the magnesium compound used is not chlorine-free, magnesium chloride is used instead. However, as indicated above, inorganic carriers such as silica and magnesium compound such as dialkylmagnesium can be used in preparation of the solid titanium catalyst component. Thus, Shinosaki et al.'s generic teach of the process encompasses that of the instant claims.

Noristi et al. teach a process for preparation of polypropylene with high isotacticity in the presence of a catalyst system comprising a solid titanium catalyst component, (b) an aluminum compound, and (c) silicon compound --the electron donor (Table 1B; col.3, line 59; col, 4, lines 26-48; col. 5, lines 6-36; and col. 6, lines 29-54).

Noristi et al. does not particular teach a process which is identical to that of the instant claims for the preparation of the solid titanium catalyst component; however the generic teaching of the process encompasses that of the instant claims (Table 1B; col.3, line 59; col, 4, line 48; col. 5, lines 6-17 and line 44; and col. 6, lines 29-54).

Thus, it would have been obvious to a skilled artisan at the time the invention was made to arrive at the same or substantially similar the solid titanium catalyst component by envisioning the cited prior art because the claimed process is within the generic disclosure of the cited prior art and all of the embodiments of the reference are expected to work.

#### **(11) Response to Argument**

##### **I. Response to issue (1)**

(i) The examiner<sup>would</sup> like to point out that claim 3 is directed to a polymerization process of using a particular catalyst system, thus, the real issue is whether the catalyst system of the instant claim is an obvious variation over the cited prior art, the process of making such a catalyst does not have to be the same as long as the final product is the same. Therefore, the argument about the process of the cited prior art for making the solid titanium catalyst component is not obvious over that of the instant claims does not carry much weight. The solid titanium catalyst components of the cited prior art have compositions which are substantially similar that of the instant claim. When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 103 such that the burden is placed on applicant to provide clear and convincing factual evidence that the respective products do in fact differ in kind- *In re Brown*, 59CCPA 1063, 173 USPQ 685 (!972); *In re Fessman*, 180 USPQ 324 (CCPA 1974)- and to come forward with evidence establishing unobvious differences between the claimed product and the prior art product. *In re Marosi* 218 USPQ 290. No evidence has been provided yet.

(ii) Response to the argument that Noristi et al. fail to teach that a chlorine-free compound of magnesium to be used in the process. In col. 5, lines 7-14, Noristi et al. teach that when metal oxide is impregnated with alkyl magnesium, "in order to have a high activity of the catalysts, it is necessary to transform said magnesium compound, prior to the reaction with the titanium compound, into magnesium dihalides or into compounds which are no longer capable of reducing the tetravalent titanium". A skilled artisan would have understood, by reading such a teaching, that if high activity of catalyst is not required, alkyl magnesium does not need to be converted to



magnesium chloride. Most of all, Noristi et al. particularly teach Mg-dialcoholates (chlorine-free magnesium compound) can be used in the process and those chlorine-free magnesium compounds can be used without said transformation (col. 4, line 48-50).

(iii) Contrary to argument that “Noristi fails to teach or suggest the requirement in claim 3 that in the second stage the solid is extracted in an inert solvent”, such is taught in col. 5, lines 6-7, “the treatment with the titanium compound can be repeated”, and in col. 7, lines 50-57, “the reaction of the filtered solid with  $\text{TiCl}_4$  is carried out by introducing the filtered solid and  $200 \text{ cm}^3$  of fresh  $\text{TiCl}_4$ ...Finally the  $\text{TiCl}_4$  is filtered, the solid is washed with hexane...”.

(iv) Response to the argument of Shinosaki does not teach or suggest that chlorine-free magnesium compound is added to the inorganic carrier and allowed to react in an alcohol and the  $\text{TiCl}_4$  extraction in the second stage. Shinosaki teaches various chlorine-free magnesium compound, a magnesium-compound-supporting inorganic carrier as indicated the above rejection (page 19, [0058] and [0059]; and page 22 (3)), although Shinosaki does not particularly teach the solvent, a skilled artisan would have been motivated by put such a process into practice and use the conventional solvent such alcohol which is used in the Working Examples. The  $\text{TiCl}_4$  extraction in the second stage is also taught in the Working Example (page 48, lines 10-16). It is noted that the cited prior art use pure  $\text{TiCl}_4$  instead of the  $\text{TiCl}_4$  solution in the instant claim; however, a skilled artisan would have understood that switch from pure  $\text{TiCl}_4$  to  $\text{TiCl}_4$  solution is an obvious variation since they both are functionally equivalent and the  $\text{TiCl}_4$  solution is milder in the treatment.

(II) Response to Issue (2)

The examiner has indicated in the first office action, Paper no. 4 and repeated again supra, the polypropylenes of Both the cited prior art and the instant claims are homopolypropylenes with high isotacticities (long isotactic sequences) and prepared by catalyst systems which are substantially similar to each other. Thus, the polypropylenes of the cited prior would inherently have the same or substantially similar properties as those of the instant claims. Appellants have not met their burden to demonstrate an unobvious difference between the claimed product and the products of the prior art examples.

In addition, appellants' argument about the properties of solubilities of their polymer is invalid. While broadest reasonable interpretation consistent with the specification is given during examination, limitations not contained in the claims will not be read therein. *In re Prater*, 162 USPQ 541. *In re Van Geuns*, 26 USPQ2d 1057. However, it is the examiner's position that the polypropylene homopolymers of Shinosaki et al., Noristi et al., Ebara et al. or Yanagihara et al. all have very high isotacticities which is due to the long isotactic propylene-unit-sequences in the polymer chain. Although Shinosaki et al., Ebara et al. or Yanagihara et al. has not disclosed the solubilities of the polypropylene in xylene at various temperatures as those of the instant application, a skilled artisan would have expect that the polypropylene of Shinosaki et al., Ebara et al. or Yanagihara et al. would inherently have the same or substantially similar solubility behavior in xylene because the solubility behaviors of polypropylenes are controlled by the isotacticities of the polypropylene.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

CL

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February 7, 2000

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